

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A ~~wellbore effluent~~ potentiometric sensor comprising
at least one reference electrode;
at least one measuring electrode with a membrane; and
at least one connector between said reference and said measuring electrode, wherein
~~said electrodes and connector form said potentiometric sensor exposed in operation to~~
~~said wellbore effluent via an opening or sample channel and wherein~~ said connector
provides a continuous conductive path between said reference and said measuring
electrode ~~in the presence of hydrocarbon-containing effluent~~ ; and
a discharge element adapted to release an aqueous solution or gel from said at least one
reference electrode onto said membrane of said at least one measuring electrode.

Claim 2 (original): A sensor according to claim 1 wherein the connector comprises a
porous material.

Claim 3 and 4 (cancelled).

Claim 5 (currently amended): A sensor according to claim 4 1 wherein the discharge element
is self-discharging ~~in~~ into the a wellbore effluent.

Claim 6 (currently amended): A sensor according to claim 4 1 wherein the discharge element
is controlled by an external control unit.

Claim 7 (currently amended): A downhole tool for measuring characteristic parameter of
wellbore effluent comprising a potentiometric sensor having
at least one reference electrode;
at least one measuring electrode with a membrane; and

at least one connector between said reference and said measuring electrode, wherein ~~said electrodes and connector form said potentiometric sensor exposed in operation to said wellbore effluent via an opening or sample channel and wherein~~ said connector provides a continuous conductive path between said reference and said measuring electrode ~~in the presence of hydrocarbon containing effluent~~ ;
a discharge element adapted to release an aqueous solution or gel directly from said at least one reference electrode onto said membrane of said at least one measuring electrode; and
a sample probe tip with a conduit for sampling fluid, wherein said sensor communicates with said conduit.

Claim 8 (original): A downhole tool according to claim 8 wherein the connector comprises a porous material.

Claims 9 and 10 (cancelled).

Claim 11 (currently amended): A downhole tool according to claim ~~10~~ 7 wherein the discharge element is self-discharging ~~in into the~~ a wellbore effluent.

Claim 12 (currently amended): A downhole tool according to claim ~~11~~ 7 wherein the discharge element is controlled by an external control unit.

Claim 13 (new): A sensor according to claim 1 wherein the membrane is ion-selective .

Claim 14 (new): A sensor according to claim 1 wherein the discharge element uses diffusion.

Claim 15 (new): A sensor according to claim 1 wherein in operation the discharge element maintains an aqueous continuum between the measuring electrode and the reference electrode in the presence of a wellbore effluent.

Claim 16 (new): A sensor according to claim 2 wherein the porous material forms a protective layer for the reference electrode.

Claim 17 (new): A downhole tool according to claim 7 wherein the membrane is ion-selective.

Claim 18 (new): A downhole tool according to claim 7 wherein the discharge element uses diffusion.

Claim 19 (new): A downhole tool according to claim 7 wherein in operation the discharge element maintains an aqueous continuum between the measuring electrode and the reference electrode in the presence of the wellbore effluent.

Claim 20 (new): A downhole tool according to claim 8 wherein the porous material forms a protective layer for the reference electrode.